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THE JOINT CHIEFS OF STAFF  
WASHINGTON, D.C. 20301-5000



**JOINT EXERCISE MANUAL  
(JEM)  
VOLUME II**

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THE JOINT CHIEFS OF STAFF  
WASHINGTON, D.C. 20301-5000

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18 FEB 1986

THE JOINT STAFF

MEMORANDUM FOR: See Distribution

Subject: Joint Exercise Manual (JEM) Volume II

1. This revision of Volume II, Joint Exercise Manual (JEM) supersedes all previous versions, which should be destroyed.
2. Volume II is specifically concerned with residual capability assessment (RECA) during exercises. It describes RECA procedures applicable to exercise player personnel, outlines the duties and responsibilities of exercise RECA controllers, and provides instructions and data for computing damage from a simulated nuclear attack. It supplements the information contained in Volume I, which provides overall guidance for exercise planning, implementation, and evaluation.
3. This memorandum, together with its enclosure, may be released into NATO channels with appropriate NATO markings.
4. This memorandum is regraded UNCLASSIFIED when separated from classified enclosure.

*Richard A. Burpee*

RICHARD A. BURPEE  
Lieutenant General, USAF  
Director for Operations

Enclosure  
a/s

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## GLOSSARY

AAC	ALASKAN AIR COMMAND
ABNCP	AIRBORNE COMMAND POST
ACE	ALLIED COMMAND, EUROPE
ACEREPS	ALLIED COMMAND EUROPE REPORTING SYSTEM
ACFK	ALTERNATE COMMAND FACILITY, KUNIA
ACP	ALLIED COMMUNICATION PUBLICATION
ADCOM	AEROSPACE DEFENSE COMMAND
ADMINREP	ADMINISTRATIVE REPORT
ADP	AUTOMATIC DATA PROCESSING
AFCENT	ALLIED FORCES CENTRAL EUROPE
AFEOC	AIR FORCE EMERGENCY OPERATIONS CENTER
AFM	AIR FORCE MANUAL
AFNORTH	ALLIED FORCES NORTHERN EUROPE
AFOC	USAF OPERATIONS CENTER
AFSOUTH	ALLIED FORCES SOUTHERN EUROPE
AGI(S)	INTELLIGENCE GATHERING SHIP(S)
AH/ERS	ALTERNATE HEADQUARTERS/EMERGENCY RELOCATION SITES
AID	AGENCY FOR INTERNATIONAL DEVELOPMENT
AIG	ADDRESS INDICATOR GROUP
AIRSTAT	OFFENSIVE WEAPONS SYSTEMS AND AIR DEFENSE STATUS REPORT
ALIMREP	ALERT IMPLEMENTATION REPORT
AMA	ALTERNATE MILITARY AUTHORITY
AMF	ALLIED COMMAND EUROPE MOBILE FORCE
AMPS	AUTOMATED MESSAGE PROCESSING SYSTEM
ANMCC	ALTERNATE NATIONAL MILITARY COMMAND CENTER
ANWD	ALPHA NUMERIC WALL DISPLAY
AR	ATRES REPORT
ARFCOS	ARMED FORCES COURIER SERVICE
ARRIVEREP	ARRIVED REPORT
ARRS	AEROSPACE RESCUE AND RECOVERY SERVICE
ARTCC(S)	AIR ROUTE TRAFFIC CONTROL CENTER(S)
ASAT	ANTISATELLITE
ASD(A&L)	ASD (ACQUISITION AND LOGISTICS)
ASD(C)	ASD (COMPTROLLER)
ASD(FM&P)	ASD (FORCE MANAGEMENT AND PERSONNEL)
ASD(ISA)	ASD (INTERNATIONAL SECURITY AFFAIRS)
ASD(ISP)	ASD (INTERNATIONAL SECURITY POLICY)
ASD(PA)	ASD (PUBLIC AFFAIRS)
ASMRO	ARMED SERVICES MEDICAL REGULATING OFFICE
ASR	AIRPORT SURVEILLANCE RADAR
ATBAN	ATOMIC TRANSMITTER BASED ANALYSIS
ATBAR	ATOMIC POSTSTRIKE RESULTS REPORT
ATCOM	COMPILATION OF ATINT REPORTS
ATINT	ATOMIC INTENTIONS REPORT
ATGIN	ATOMIC GROUND INTERCEPT REPORT

ATP  
 ATPOS  
 ATREQ  
 ATRES  
 ATRON  
 ATSAR  
 AUTODIN  
 AUTOSEVOCOM  
 AUTOVON  
 AVAILAIR  
 BASEDEV  
 BASEREP  
 BCD  
 BDP  
 BISCLANT  
 BMEWS  
 BPS  
 C3  
 C3CM  
 C3S  
  
 C-E  
 C&O  
 CAB  
 CAC  
 CANLANT  
 CAO  
 CAO SOP  
  
 CARDA  
  
 CARIBSEAFRON  
 CAT  
 CBR  
 CCC  
 CCG  
 CCGD  
 CDRUSASG  
 CEF  
 CEL  
 CENTLANT  
 CESP  
 CGF  
 CGS  
 CHOP  
 CIA  
 CIC  
 CIMEX  
 CINCAD  
 CINCHAN  
 CINCLANTFLT

ALLIED TACTICAL PUBLICATION  
 ATOMIC POSTSTRIKE REPORT  
 ATOMIC SUPPORT REQUEST  
 RESUME OF POSTSTRIKE RESULTS  
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CINCMAC  
CINCNORAD

CINCPACAF  
CINCPACFLT  
CINCSAC  
CINCUSNAVEUR  
CIVREP  
CJCS  
CMC  
CNO  
COC  
COCR  
COMAMF  
COMFAIRMED  
COMICEDEFOR  
COMIDEASTFOR  
COMINT  
COMJARCC

COMNAVFORCARIB  
COMOCEANSUBAREA  
COMSEC  
COMSPOT  
COMSTAT  
COMTHIRDFLT  
COMUKADR  
COMUSJAPAN  
COMUSJTF  
COMUSKOREA  
CONPLAN  
CONREP  
CONSA  
CONUS  
CONVORD  
COOP  
COPDAF

COSIN  
CP  
CPX  
CRAF  
CRAFREP  
CRITICOMM  
CRT  
CSA  
CSAF  
CSOD  
CSP

COMMANDER IN CHIEF, MILITARY AIRLIFT COMMAND  
COMMANDER IN CHIEF, NORTH AMERICAN AIR  
DEFENSE COMMAND

COMMANDER IN CHIEF, PACIFIC AIR FORCES  
COMMANDER IN CHIEF, PACIFIC FLEET  
COMMANDER IN CHIEF, STRATEGIC AIR COMMAND  
COMMANDER IN CHIEF, US NAVAL FORCES EUROPE  
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CHIEF OF NAVAL OPERATIONS  
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COMMANDER, ACE MOBILE FORCE  
COMMANDER, FLEET AIR MEDITERRANEAN  
COMMANDER, ICELAND DEFENSE FORCE  
COMMANDER, MIDDLE EAST FORCE  
COMMUNICATIONS INTELLIGENCE  
COMMANDER, JOINT AIR RECONNAISSANCE  
COORDINATION CENTER  
COMMANDER, NAVAL FORCES CARIBBEAN AREA  
COMMANDER, OCEAN SUB AREA, US ATLANTIC FLEET  
COMMUNICATIONS SECURITY  
COMMUNICATIONS SPOT REPORT  
COMMUNICATIONS STATUS REPORT  
COMMANDER, THIRD FLEET  
COMMANDER, UNITED KINGDOM AIR DEFENSE REGION  
COMMANDER, US FORCES JAPAN  
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CHIEF OF STAFF, US AIR FORCE  
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CV  
CVN  
CVW  
CW  
DAO  
DASD (A)

DCA  
DCAEUR  
DCAPAC  
DCAS  
DCS  
DCSC  
DDC  
DDO  
DDO (NMCC)

DEFCON  
DEPOPSDEP  
DEPSECDEF  
DESC  
DESCHA  
DESCHORD  
DFSC  
DG  
DGZ  
DHHS  
DIA  
DICO  
DIRM

DISR  
DISUM  
DIVERTORD  
DJS  
DJSM  
DLA  
DMA  
DMSP  
DMZ  
DNA  
DOC  
DOD  
DOE  
DOS  
DOT  
DPC  
DSAA  
DSCS  
DSEB

AIRCRAFT CARRIER  
NUCLEAR AIRCRAFT CARRIER  
CARRIER AIR WING  
CHEMICAL WARFARE  
DEFENSE ATTACHE OFFICE  
DEPUTY ASSISTANT SECRETARY OF DEFENSE  
(ADMINISTRATION)  
DEFENSE COMMUNICATIONS AGENCY  
DEFENSE COMMUNICATIONS AGENCY, EUROPE  
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DEFENSE CONTRACT ADMINISTRATIVE SERVICE  
DEFENSE COMMUNICATIONS SYSTEM  
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DATA DISTRIBUTION CENTER  
DEPUTY DIRECTOR FOR OPERATIONS  
DEPUTY DIRECTOR FOR OPERATIONS (NATIONAL  
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DEFENSE READINESS CONDITION  
DEPUTY OPERATIONS DEPUTY  
DEPUTY SECRETARY OF DEFENSE  
DEFENSE ELECTRONICS SUPPLY CENTER  
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DESTINATION CHANGE ORDER  
DEFENSE FUEL SUPPLY CENTER  
DEFENSE GUIDANCE  
DESIRED GROUND ZERO  
DEPARTMENT OF HEALTH & HUMAN SERVICES  
DEFENSE INTELLIGENCE AGENCY  
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DEPARTMENT OF COMMERCE  
DEPARTMENT OF DEFENSE  
DEPARTMENT OF ENERGY  
DEPARTMENT OF STATE  
DEPARTMENT OF TRANSPORTATION  
DEFENSE PLANNING COMMITTEE, NATO  
DEFENSE SECURITY ASSISTANCE AGENCY  
DEFENSE SATELLITE COMMUNICATIONS SYSTEM  
DEFENSE SHIPPING EXECUTIVE BOARD

DSP  
DSSCS

DSTP  
DTG  
ERT  
EA  
EAM  
EAP  
EAUX  
EBCDIC

ECCM  
ECG  
ECM  
ECR  
E&DCP  
EEFI  
EFTO  
EMAS  
EMATS  
EMCON  
EMERGCON  
ENDEX  
EOB  
EOC  
EOP  
EPG  
ER  
ERCS  
ESCAT  
ESM  
ETA  
EUR  
EW  
EXCRIT  
EXPLAN  
FAA  
FCDNA  
FEMA  
FLT  
FMF  
FORGEN  
FRD  
FRN  
FTS  
FTX  
GDR  
GENREL  
GMT

DEFENSE SUPPORT PROGRAM  
DEFENSE SPECIAL SECURITY COMMUNICATIONS  
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DIRECTOR OF STRATEGIC TARGET PLANNING  
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EXECUTION REFERENCE TIME  
EMERGENCY ACTION  
EMERGENCY ACTION MESSAGE  
EMERGENCY ACTION PROCEDURES  
EASTERN AUXILIARY  
EXTENDED BINARY CODED DECIMAL INTERCHANGE  
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FORMERLY RESTRICTED DATA  
FORCE REQUIREMENT NUMBER  
FILE TRANSFER SERVICE  
FIELD TRAINING EXERCISE  
GERMAN DEMOCRATIC REPUBLIC  
GENERAL RELEASE  
GREENWICH MEAN TIME

GSA	GENERAL SERVICES ADMINISTRATION
GWS	GENERAL WAR SUBSYSTEM
HAVREP	HAVEN REPORT
HF	HIGH FREQUENCY
HSD	HIGH SPEED DATA
HUMINT	HUMAN SOURCE INTELLIGENCE
IAW	IN ACCORDANCE WITH
IBERLANT	IBERIAN ATLANTIC AREA
ICBM	INTERCONTINENTAL BALLISTIC MISSILE
IEMATS	IMPROVED EMERGENCY MESSAGE AUTOMATIC TRANSMISSION SYSTEM
IFF	IDENTIFICATION, FRIEND OR FOE
ILS	INSTRUMENT LANDING SYSTEM
INTREP	INTELLIGENCE REPORT
INTSIT	INTELLIGENCE SITUATION REPORT
IRS	INFORMATION REPORTING SYSTEM
J-1	DIRECTOR, J-1 (PERSONNEL), OJCS
J-3	DIRECTOR, J-3 (OPERATIONS), OJCS
J-4	DIRECTOR, J-4 (LOGISTICS), OJCS
J-5	DIRECTOR, J-5 (PLANS & POLICY), OJCS
JABUP	JOINT AIR BASE UTILIZATION PLAN
JAD	JOINT ANALYSIS DIRECTORATE, OJCS
JADREP	JOINT RESOURCE ASSESSMENT DATA BASE REPORT
JAI	JOINT ADMINISTRATIVE INSTRUCTION
JANAP	JOINT ARMY, NAVY, AIR FORCE PUBLICATION
JCC	JOINT COORDINATION CENTER
JCS	JOINT CHIEFS OF STAFF
JCSAN	JOINT CHIEFS OF STAFF ALERTING NETWORK
JCSMC	JOINT CHIEFS OF STAFF MESSAGE CENTER
JDA	JOINT DEPLOYMENT AGENCY
JDS	JOINT DEPLOYMENT SYSTEM
JDSSC	JOINT DATA SYSTEMS SUPPORT CENTER
JECC	JOINT EXERCISE CONTROL CENTER
JECG	JOINT EXERCISE CONTROL GROUP
JECS	JOINT EXERCISE CONTROL SYSTEM
JED	JOINT EXERCISE DIVISION, OJCS
JEEP	JOINT EMERGENCY EVACUATION PLAN
JEM	JOINT EXERCISE MANUAL
JMPAB	JOINT MATERIEL PRIORITIES AND ALLOCATION BOARD
JMRO	JOINT MEDICAL REGULATING OFFICE
JNPE	JOINT NUCLEAR PLANNING ELEMENT
JOC	JOINT OPERATIONS CENTER
JOPEG	JOINT OPERATION PLANNING AND EXECUTION SYSTEM
JOPS	JOINT OPERATION PLANNING SYSTEM
JOPSREP	JOPS REPORTING SYSTEM
JRC	JOINT RECONNAISSANCE CENTER
JRCC	JOINT RESCUE COORDINATION CENTER
JRS	JOINT REPORTING STRUCTURE
JSCO	JOINT STAFF COMMUNICATIONS OFFICE

JSCP  
JSCA  
JSTPS  
JTB  
JTF  
LANT  
LAUNCH  
LERTCON  
LF  
LOC  
LOGSITREP  
LORAN  
LRA  
LRC  
LSD  
MAAG  
MAB  
MAC  
MAF  
MAO  
MARAD  
MARCONREP  
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MAU  
MAW  
MC&G  
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MERCASREP  
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MEREPS

MERSHIPS  
MFL  
MGS  
MIJI

MILINREP  
MILSTAMP

MILSTRAP

MILSTRIP

MJCS

MNC  
MOBREP  
MOD  
MOP  
MOVEREP

JOINT STRATEGIC CAPABILITIES PLAN  
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MSC  
MSEL  
MTMC  
MUNIREP

MW  
MWDS  
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NASA  
NATO  
NAVCOMSTA  
NBC  
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NBC-3  
NCA  
NCOC  
NCS  
NCSO  
NCSORG  
ND  
NDERS

NDMS  
NDRF  
NEACP  
NFARS  
NIPIR

NLT  
NM  
NMCC  
NMCS  
NMIC  
NOAA

NOMS  
NONARRIVEDREP  
NORAD  
NORLANT  
NPES  
NRL  
NSA  
NSA/CSS

NSC  
NSO  
NSP

MILITARY SEALIFT COMMAND  
MASTER SCENARIO EVENTS LIST  
MILITARY TRAFFIC MANAGEMENT COMMAND  
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NATIONAL DEFENSE RESERVE FLEET  
NATIONAL EMERGENCY AIRBORNE COMMAND POST  
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NUCLEAR IMMEDIATE PHOTO INTERPRETATION  
REPORT  
NOT LATER THAN  
NAUTICAL MILE  
NATIONAL MILITARY COMMAND CENTER  
NATIONAL MILITARY COMMAND SYSTEM  
NATIONAL MILITARY INTELLIGENCE CENTER  
NATIONAL OCEANIC AND ATMOSPHERIC  
ADMINISTRATION  
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NONARRIVAL OF SHIPPING REPORT  
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NUCWA  
NUDET  
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NUREP  
NUWEP  
NWP  
NWSB  
OB  
OCA  
OCR-EMERG

OCSA/ADV

ODCR  
OET  
OGS  
OJCS  
ONPG  
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OPSDEPS  
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OSS  
OT  
OTC  
OTH  
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NATIONAL TARGET BASE/TARGET  
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OPERATIONAL CONTROL AUTHORITY  
OPERATIONAL CHANGE REPORT-EMERGENCY-  
OPERATIONAL REPORTS  
OFFICE, CHIEF OF STAFF, ARMY, ADVANCE  
OPERATIONS DEPUTIES CONFERENCE ROOM (NMCC)  
OFFICE OF EMERGENCY TRANSPORTATION  
OVERSEAS GROUND STATION  
ORGANIZATION OF THE JOINT CHIEFS OF STAFF  
OPERATIONAL NUCLEAR PLANNING GROUP  
OPERATIONAL CONTROL  
OPERATIONS PLANNERS GROUP  
OPERATION PLAN  
OFFICE OF THE CHIEF OF NAVAL OPERATIONS  
OPERATION ORDER  
COMMANDER'S OPERATIONAL REPORT  
OPERATIONAL COMMUNICATIONS  
OPERATIONS DEPUTIES  
OPERATIONS SECURITY  
OPERATIONS SUMMARY  
OFFICE OF THE SECRETARY OF DEFENSE  
OCEAN SURVEILLANCE INFORMATION SYSTEM  
OPERATIONAL STORAGE SITES  
OPERATIONS TEAM  
OFFICER IN TACTICAL COMMAND  
OVER THE HORIZON RADAR  
PACIFIC  
POSTATTACK COMMAND AND CONTROL SYSTEM  
PACIFIC FLEET  
PERMISSIVE ACTION LINK  
PRECISION APPROACH RADAR  
PRIMARY ALERTING SYSTEM  
PRESIDENTIAL EMERGENCY ACTION DOCUMENTS  
PERSONNEL REPORT  
POSITION OF INTENDED MOVEMENT  
PEOPLES LIBERATION ARMY  
PORT OF EMBARKATION  
PETROLEUM, OIL, AND LUBRICANTS  
POL CAPABILITIES REPORT

POMCUS	PRE-POSITIONED OVERSEAS MATERIEL, CONFIGURED TO UNIT SETS
PORTSUM	PORT SUMMARY
PRC	PEOPLES REPUBLIC OF CHINA
PSYOP	PSYCHOLOGICAL OPERATIONS
PSYWAR	PSYCHOLOGICAL WARFARE
PW	PRISONER OF WAR
PWRS	PRE-POSITIONED WAR RESERVE STOCK
RAD	RADIATION
RAP	REMEDIAL ACTION PROJECT
RCA	RIOT CONTROL AGENTS
RCC	RECONNAISSANCE COORDINATION CENTER
RCC	REGION CONTROL CENTERS
RDD	REQUIRED DELIVERY DATE
READYREP	OPERATIONAL READINESS REPORT
RECA	RESIDUAL CAPABILITY ASSESSMENT
RECAT	RESIDUAL CAPABILITY ASSESSMENT TEAM
RECLAU	RECONNAISSANCE LAUNCH REPORT
RECON	RECONNAISSANCE
RECONT	RECONNAISSANCE INTENTIONS REPORT
RECREP	RECONNAISSANCE REPORT
REDREC	REDIRECTION AND RECONSTITUTION
REPOL	PETROLEUM DAMAGE DEFICIENCY REPORT
REPTOFS	REPORTING OFFICER
RF	RADIO FREQUENCY
RISOP	RED INTEGRATED STRATEGIC OFFENSIVE PLAN
RMS	RESOURCE MONITORING SUBSYSTEM
RNO	REGIONAL NUCLEAR OPTION
ROE	RULES OF ENGAGEMENT
ROK	REPUBLIC OF KOREA
RRM	RED RESOURCE MONITOR
SAA	SINGLE AGENCY ACTION
SAC	STRATEGIC AIR COMMAND
SACCS	SAC AUTOMATIC COMMAND AND CONTROL SYSTEM
SACEUR	SUPREME ALLIED COMMANDER EUROPE
SACLANT	SUPREME ALLIED COMMANDER ATLANTIC
SAILEDREP	SAILED REPORT
SAILORD	SAILING ORDER
SANGUINE	EXTREMELY LOW FREQUENCY COMMUNICATIONS
SAO	SELECTED ATTACK OPTION
SAR	SEARCH AND RESCUE
SCATANA	SECURITY CONTROL OF AIR TRAFFIC AND NAVIGATIONAL AIDS
SCI	SENSITIVE COMPARTMENTED INFORMATION
SECDEF	SECRETARY OF DEFENSE
SECSTATE	SECRETARY OF STATE
SELREL	SELECTIVE RELEASE
SERER	SURVIVAL, EVASION, RESISTANCE, ESCAPE AND RECOVERY



SHAPE	SUPREME HEADQUARTERS ALLIED POWERS
SHIPSUM	EUROPE
SI	SHIPPING SUMMARY
SIDA	SPECIAL INTELLIGENCE
SIDAC	SINGLE INTEGRATED DATA BASE
SIGINT	SINGLE INTEGRATED DAMAGE ANALYSIS CAPABILITY
SIOP	SIGNALS INTELLIGENCE
SIOP-ESI	SINGLE INTEGRATED OPERATIONAL PLAN
SITREP	SIOP - EXTREMELY SENSITIVE INFORMATION
SJCS	COMMANDER'S SITUATION REPORT
SLBM	SECRETARY, JOINT CHIEFS OF STAFF
SLBM D&W	SEA-LAUNCHED BALLISTIC MISSILE
SM	SLBM DETECTION AND WARNING
SOA	SECRETARY, JCS MEMORANDUM
SOF	STATUS OF ACTIONS
SOP	SPECIAL OPERATIONS FORCE
SPARTAN	STANDING OPERATING PROCEDURES
SPECAT	SPECIAL ACTIVITY REPORT FOR THREAT ANALYSIS
SPIREP	SPECIAL CATEGORY
SRC	SPECIAL INTELLIGENCE REPORT
SRP	SPACE RESPONSE CELL
SRTS	SIOP RECONNAISSANCE PLAN
SSAN	STRATEGIC ROCKET TROOPS
SSBN	SOCIAL SECURITY ACCOUNT NUMBER
SSN	BALLISTIC MISSILE NUCLEAR SUBMARINE
SSO	SOCIAL SECURITY NUMBER
STARTEX	SPECIAL SECURITY OFFICE
STATE	START OF EXERCISE
STRIKOPREP	DEPARTMENT OF STATE
STRIKSUM	STRIKE OPERATION REPORT
SUBOPREP	STRIKE SUMMARY REPORT
SUPINTREP	SUBMARINE OPERATION REPORT
TACAMO	SUPPLEMENTARY INTELLIGENCE REPORT
TACAN	TAKE CHARGE AND MOVE OUT
TDD	TACTICAL CONTROL AND NAVIGATION SYSTEM
TDI	TARGET DGZ DESIGNATOR
TDY	TARGET DATA INVENTORY
TFW	TEMPORARY DUTY
TOA	TACTICAL FIGHTER WING
TPFDD	TRANSPORTATION OPERATING AGENCY
TRA	TIME-PHASED FORCE AND DEPLOYMENT DATA
TW/AA	TEMPORARY RESTRICTED AREA
UCP	TACTICAL WARNING/ATTACK ASSESSMENT
UDS	UNIFIED COMMAND PLAN
UHF	USER DISPLAY SEGMENT
UK	ULTRA HIGH FREQUENCY
UNAAF	UNITED KINGDOM
UNITREP	UNIFIED ACTION ARMED FORCES
URGORBAT	UNIT REPORTING SYSTEM
	URGENT ORDER OF BATTLE REPORT

URGWORBAT	URGENT ACE WAR ORDER OF BATTLE
USA	UNITED STATES ARMY
USAF	UNITED STATES AIR FORCE
USBRO	US BASE REQUIREMENTS OVERSEAS
USCG	US COAST GUARD
USCENTCOM	US CENTRAL COMMAND
USCINCCENT	COMMANDER IN CHIEF, US CENTRAL COMMAND
USCINCEUR	US COMMANDER IN CHIEF, EUROPE
USCINCLANT	COMMANDER IN CHIEF, US ATLANTIC COMMAND
USCINCPAC	COMMANDER IN CHIEF, US PACIFIC COMMAND
USCINCRD	COMMANDER IN CHIEF, US READINESS COMMAND
USCINCSO	COMMANDER IN CHIEF, US SOUTHERN COMMAND
USCINCSpace	COMMANDER IN CHIEF, US SPACE COMMAND
USCOMSOLANT	US COMMANDER, SOUTH ATLANTIC FORCE
USDELMC	UNITED STATES DELEGATE TO MILITARY COMMITTEE, NATO
USEUCOM	US EUROPEAN COMMAND
USG	UNITED STATES GOVERNMENT
USLANTCOM	US ATLANTIC COMMAND
USMC	UNITED STATES MARINE CORPS
USN	UNITED STATES NAVY
USNMR	UNITED STATES NATIONAL MILITARY REPRESENTATIVE (NATO)
USPACOM	US PACIFIC COMMAND
USREDCOM	US READINESS COMMAND
USSOUTHCOM	US SOUTHERN COMMAND
USSPACECOM	US SPACE COMMAND
UW	UNCONVENTIONAL WARFARE
VHF	VERY HIGH FREQUENCY
VLF	VERY LOW FREQUENCY
VOCOM	VOICE COMMUNICATIONS
VOR	VHF OMNI RANGE
VP	PATROL SQUADRON
VQ	FLEET AIR RECONNAISSANCE SQUADRON
VRF	VIDEO RECORDING FACILITY
WAUX	WESTERN AUXILIARY
WCP	WING COMMAND POST
WD	WHITE DOT
WEPREP	NUCLEAR WEAPONS REPORT
WEPREQ	REQUEST FOR JCS NUCLEAR RESERVE WEAPONS
WESTLANT	WESTERN ATLANTIC
WH	WHITE HOUSE
WHCA	WHITE HOUSE COMMUNICATIONS AGENCY
WIN	WWMCCS INTERCOMPUTER NETWORK
WINTX	WINTER EXERCISE
WWDMS	WORLDWIDE DATA MANAGEMENT SYSTEM
WWMCCS	WORLDWIDE MILITARY COMMAND AND CONTROL SYSTEM
WWMP	WORLDWIDE MESSAGE PROCESSOR
Z	ZULU TIME

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## RESIDUAL CAPABILITY ASSESSMENT (U)

1. (U) General. The purpose of the volume is to provide exercise controller personnel with a set of standardized procedures to create an exercise nuclear environment for player personnel. This volume is intended for use only during exercise situations. Specific topics addressed in this volume include:

a. (U) Residual capability assessment (RECA) procedures applicable to exercise player personnel.

b. (U) The role and function of controller personnel in the RECA process.

c. (U) RECA scripting procedures for nuclear direct effects and fallout radiation.

## 2. (U) Background

a. (U) Reference f describes the requirements of the NCA for transattack/postattack residual capability information, describes the overall RECA system to support these requirements, and identifies the RECA responsibilities of the commanders of unified and specified commands, Services, and DOD agencies. Reference f also addresses the civil damage assessment functions required to support the RECA process. JCS Pub 6, NORADM 55-19 (Volume VIII), and Air Force OPLAN 2-84 address the exercise reporting procedures that will be implemented following a nuclear attack to support the RECA process.

b. (U) The purpose of RECA is to assess resources to determine the residual military capabilities following a nuclear attack on the United States.

c. (U) The RECA process is supported by information derived from Nuclear Detonation (NUDET), CONUS Airborne Reconnaissance for Damage Assessment (CARDA), and Automated Data Bases reports. These reports provide a means for estimating the effects of a nuclear attack on US resources. These initial estimates are refined by information derived from the Joint Resource Assessment Data Base Report (JADREP). The JADREP card format is used to report selected information concerning the observed status of US military installations or facilities sustaining a degradation in capability due to one or more of the causes of damage identified in the JADREP reporting procedures in reference d.

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3. (U) RECA Procedures for Player Personnel

e. (U) General

(1) (U) RECA play will evolve based on the nuclear laydown scenario developed for the exercise. Controller personnel will be provided a RECA scenario based on the nuclear laydown to promote active participation on the part of RECA players at all levels.

(2) (U) The scripted inputs that make up the RECA scenario are designed to ensure consistency at all levels of RECA play.

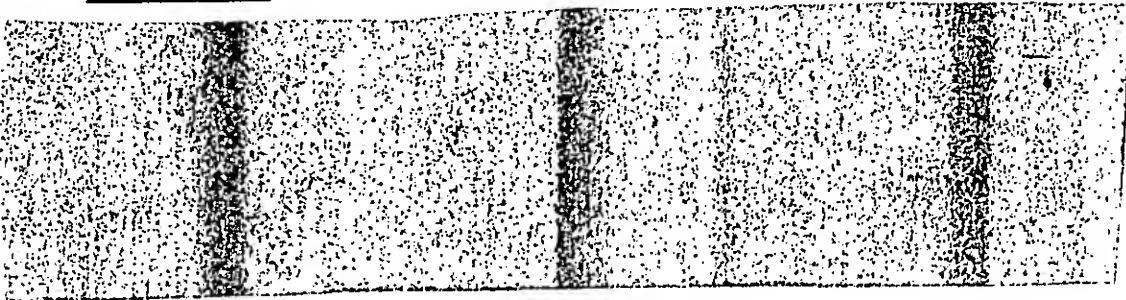
b. (U) NUDET Play

(1) (U) North American Air Defense Command (NORAD) will disseminate nuclear event information through the use of NORAD forward automated reporting system (NFARS) and the nuclear detonation information summary (NUDIS).

(2) (U) Unified and specified commands responsible for reporting to the Joint Chiefs of Staff will report in accordance with instructions governing Group 1 NUDET Reports (JCS Pub 6, Volume II). Group 1 NUDET voice reports will be confirmed by record communications and may be modified for exercise use due to the sensitivity of this information.

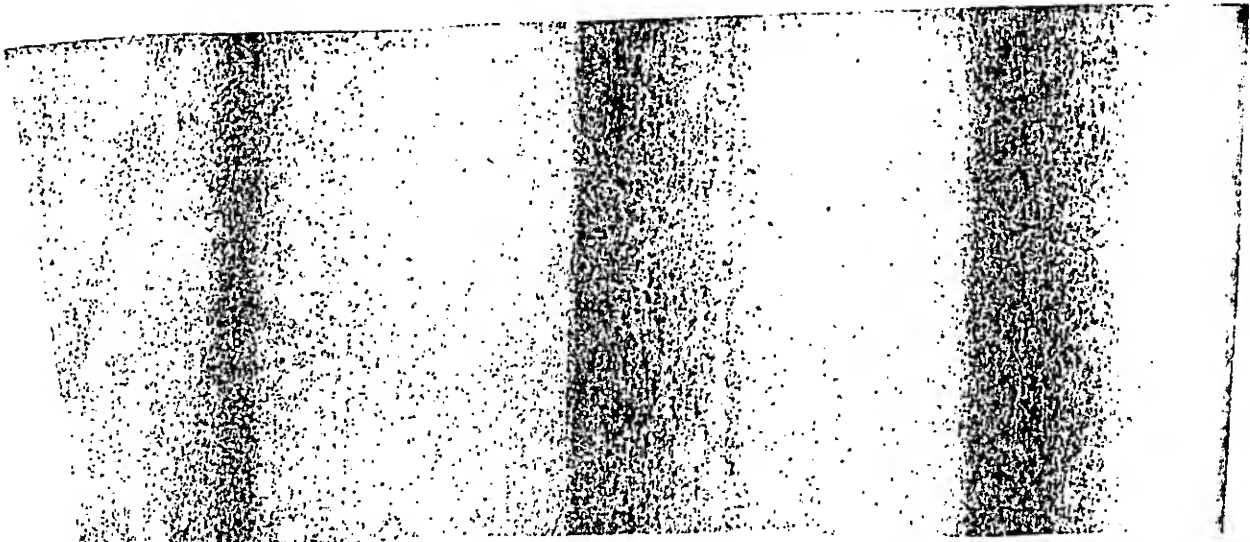
(3) (U) Exercise controllers will provide players with information which has been derived from NUDET Direct Effect Scripts based on the exercise nuclear laydown. RECA players will use this information to formulate assessments of resource damage and to comply with reporting requirements contained in JCS Pub 6, Volume II.

c. (U) CARDA Play



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(c) (U) Remarks, if any.

(4) (U) Deviations from the CARDA play procedures described in the preceding paragraphs must be approved by the Exercise Project Officer, Joint Exercise Division, Operations Directorate, OJCS.

d. (U) Fallout Play

(1) (U) Fallout Prediction. Wind data will be provided on a time-phased basis by exercise controllers for the use of player activities involved with fallout prediction. The Exercise Project Officer, OJCS, will provide exercise controllers with the appropriate wind data.

(2) (U) Radiation Casualties and Area Denial. Exercise controllers will provide players with information to support the determination of radiation casualties and to identify areas denied by radiation. This information will include current and accumulated radiation dose rates at selected military installations or facilities and percentages to be used in determining radiation casualties and fatalities. RECA players will use casualty and area denial information to formulate assessments and comply with pertinent reporting requirements.

4. (U) RECA Controllers

a. (U) General. The exercise RECA controllers are personnel appointed by their respective commands or units as part of the

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Exercise Control Group, and they are charged with establishing the environment resulting from the nuclear attack simulated for the exercise.

b. (U) Functions

(1) (U) Determine the effects of exercise NUDETs on installations and personnel located within the controllers' areas of responsibility. This function will be supported by the scripting process discussed in paragraph 5 below.

(2) (U) Determine the degree to which resources and capabilities of installations and units have been degraded as a result of NUDET effects and translate the situation formulated into appropriate exercise inputs (see subparagraphs 5a and 5b below).

(3) (U) Determine what information (input) should be automatically inserted into the exercise and what information should be withheld pending a specific request by a higher headquarters, staff member, or commander.

c. (U) Fallout Prediction. Wind data, provided by the Exercise Project Officer, OJCS, will be used by RECA controllers to support player activities involved in the process of fallout prediction (see subparagraph 3d above). Reposited wind data will be released to appropriate player personnel in accordance with a time-phased release schedule. For example:

SAMPLE FALLOUT WIND DATA RELEASE SCHEDULE

<u>DATA TO BE USED</u> <u>(OCT 68)</u>	<u>TIME OF RELEASE</u> <u>(JUN 86)</u>	<u>PERIOD OF VALIDITY</u> <u>(JUN 86)</u>
021200Z-022400Z	070900Z	071200Z-072400Z
030001Z-031200Z	072100Z	080001Z-081200Z
031200Z-032400Z	080900Z	081201Z-082400Z
040001Z-041200Z	082100Z	090001Z-091200Z
041200Z-042400Z	090900Z	091201Z-092400Z

d. (U) RECA Scripting

(1) (U) Purpose. RECA scripting is a procedure to be employed by RECA controllers in the process of creating an

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artificial nuclear environment for exercise players. RECA scripting procedures have been developed for computing NUDET effects from the exercise NUDET list. These procedures must be adhered to in order to provide realistic and standardized RECA information to player personnel.

(2) (U) Script Data. Data derived through RECA scripting procedures must be injected into exercise play on a time-phased basis in accordance with the exercise scenario. This data is not subject to question or dispute and represents a description of the players' environment..

(3) (U) Types of Scripts. There are two types of RECA scripts that will provide a basis for RECA player injects.

(a) (U) NUDET Direct Effects Scripts.

(b) (U) NUDET Fallout Radiation Scripts.

5. (U) RECA Scripting

a. (U) NUDET Direct Effects Scripts. NUDET direct effects scripts will be computer produced for many of the military installations and facilities playing in the exercise. Military installations and facilities not covered by a computer-produced script, but involved in exercise play, will be manually scripted by appropriate RECA controllers (see subparagraph 5a(3) below).

(1) (U) Computer-Produced Scripts. Computer-produced scripts will be disseminated to appropriate RECA controller personnel, for their respective areas, prior to the start of the exercise. These scripts provide a time-sequenced list of the level of damage sustained at given military installations and facilities due to the direct effects of particular NUDETs involved in exercise play. The level of damage attributable to each NUDET is expressed in terms of a nuclear damage (ND) number. Physical damage descriptions associated with the various ND numbers are contained in the Appendix. The RECA controller will be responsible for developing time-phased player injects based on the application of damage effects in the ND descriptions to the physical plant and personnel located at the installation scripted. It is important to note that ND numbers representing damage to each installation are computed for each NUDET as if it were the only NUDET affecting that

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installation. ND numbers do not reflect the cumulative damage resulting from any prior NUDETs. Controllers should compute cumulative damage at each installation by successively applying the damage figures found in the Appendix to the already damaged installation.

(2) (U) Computer Script Format. Figure 1 illustrates the format of the computer-produced scripts. The upper half of the figure pertains to blast damage and the lower half to fallout calculations. Discussion in this section is limited to the blast damage portion. Terms within parentheses are generic and would be replaced by actual data in the computer scripts distributed to controllers. Each installation is assigned to an entity called a Complex, which is simply a collection of installations located in the same geographical area. Each Complex has a unique name and damage scripts are ordered alphabetically by Complex name. As can be seen in Figure 1, the Complex name appears centered near the top of the page. Identification numbers and detonation times are listed for each NUDET causing damage to installations in the named Complex. (Time is a six-digit field consisting of the day, followed by hours and minutes.) Each installation in the Complex is listed next, and damage (expressed as an ND number) to the installation from each NUDET appears in the same column as NUDET number and time. Installation data listed include installation name, category code, and description. In this example the Complex contains three installations. Complex and installation names are generally similar, but not always. Therefore, controllers may have to scan the list of installation names in the index provided with the damage scripts in order to determine the name of the applicable Complex and locate it in the listing.

(3) (U) Manual Scripting

(a) (U) General. The following procedure will be used to manually script the NUDET direct effects on installations and personnel.

(b) (U) Procedure. The ND description number for a given installation is computed as follows:

1. (U) Step 1--Check the NUDET list for all NUDETs that are in the general proximity of the



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EXERCISE (EXERCISE NAME)

NUCLEAR DAMAGE SCRIPT FOR MINOR COMPLEX  
(COMPLEX NAME)  
NUCLEAR BLAST DAMAGE

DATE PRODUCED (DATE)

NUDET NUMBER  
TIME OF DETONATION

L0003  
(TIME)

L0012  
(TIME)

L0015  
(TIME)

INSTALLATION  
(INSTALLATION NAME)  
CAT CODE (CODE)  
(INSTALLATION DESCRIPTION)

NUCLEAR DAMAGE NUMBER  
ND02 ND15 ND05

INSTALLATION  
(INSTALLATION NAME)  
CAT CODE (CODE)  
(INSTALLATION DESCRIPTION)

NUCLEAR DAMAGE NUMBER  
ND02 ND16 ND06

INSTALLATION  
(INSTALLATION NAME)  
CAT CODE (CODE)  
INSTALLATION DESCRIPTION

NUCLEAR DAMAGE NUMBER  
ND02 ND16 ND04

FALLOUT  
ARRIVAL  
AT TIME

ATMOSPHERIC FALLOUT  
RADS/HR AT TIME

END  
CONTAMINATION  
DATE

		17/2300	18/1100	18/2300	19/1100	19/2300	20/1100	20/2300	21/1100	20/1100
INSTALLATION										
(INSTALLATION NAME)	(TIME)	22	15	9	5	2	0	0	0	
(INSTALLATION NAME)	(TIME)	19	12	8	4	2	1	0	0	
(INSTALLATION NAME)	(TIME)	19	12	8	4	2	1	0	0	

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Figure 1

PAGE(#)

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installation (100 miles or less). On a map, locate ground zero and determine the distance (in miles) between ground zero and the center of the installation (for each NUDET).

2. (U) Step 2--Use appropriate (air or surface) Charts in subparagraph 5a(3)(c) below. Apply mileage determined in Step 1 and yield of NUDET (from NUDET list) to determine the ND number.

3. (U) Step 3--Using the appropriate ND script in The Appendix, the RECA controller should compute the level of damage for all resources and facilities located on the installation. For those types of resources not listed in the ND script, the controller must infer an appropriate damage level from similar resources contained in the script.

4. (U) Example of RECA computation (for Illustration only):

Factors

Installation: XYZ AFB  
Location: 40°N 96°W  
Weapon: Nuclear (NUDET List L0028)  
Size: Medium (5 MT)  
Ground Zero: 40°10'N 95°45'W  
Burst: air  
Time: 0001Z

Computations

Step 1

- NUDET list indicates NUDET L0028 as medium yield air burst at 0001Z.
- XYZ AFB is determined to be 15 miles distant; therefore, it is "affected."

Step 2

- Using the air burst matrix in subparagraph 5a(3)(c), the ND number is found at the intersection of the 5 MT column and the 15 NM row. In this example ND = 7.

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(Note: Controllers will have to interpolate/extrapolate for yields/distances not listed in tables.)

Step 3

- Chart for ND-07 in Appendix describes what has happened to XYZ AFB.

Step 4

- Inputs for exercise are derived from these descriptions and are inserted into exercise play.
  - By means determined to have survived.
  - According to established real-time formats and time schedules.
  - In language and completeness commensurate with the situation prevailing at the time.

(c) (U) Air and Surface Burst Charts

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1. (U) Air Burst

ND DESCRIPTION NUMBER  
AS A FUNCTION OF  
YIELD AND DISTANCE FROM GROUND ZERO

DISTANCE NM.	YIELD MT					
	.50	1.0	2.0	5.0	10.0	18.0
1.1	16	16	16	16	16	16
1.3	15	16	16	16	16	16
1.5	14	16	16	16	16	16
1.7	13	16	16	16	16	16
2.0	12	16	16	16	16	16
2.5	10	15	16	16	16	16
3.0	09	14	15	16	16	16
3.5	09	13	14	16	16	16
4.0	07	12	13	15	16	16
4.5	07	11	12	14	16	16
5.0	05	11	12	14	15	16
5.5	05	10	11	13	15	16
6.5	03	09	10	12	14	15
7.0	03	08	10	12	13	14
8.0	03	07	09	11	13	14
9.0	02	06	08	10	12	13
10.0	02	06	07	10	11	12
11.0	02	05	07	09	11	11
12.0	01	05	06	08	10	11
15.0	00	04	05	07	08	10
17	00	03	04	06	08	09
20	00	02	03	05	07	08
23	00	02	03	04	06	07
25	00	02	03	04	05	06
30	00	01	02	03	04	05
35	00	00	01	02	03	05
40	00	00	00	02	03	04
45	00	00	00	01	02	03
50	00	00	00	01	02	03
56	00	00	00	00	02	03
63	00	00	00	00	01	02
78	00	00	00	00	00	01
90	00	00	00	00	00	00

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2. (U) Surface Burst

ND DESCRIPTION NUMBER  
AS A FUNCTION OF  
YIELD AND DISTANCE FROM GROUND ZERO

DISTANCE	YIELD MT					
NM.	.50	1.0	2.0	5.0	10.0	18.0
1.1	16	16	16	16	16	16
1.3	15	16	16	16	16	16
1.4	14	16	16	16	16	16
1.7	13	15	16	16	16	16
1.9	12	14	15	16	16	16
2.2	11	13	15	16	16	16
2.4	10	12	14	16	16	16
2.8	10	11	13	15	16	16
3.2	09	10	12	14	16	16
3.6	09	09	11	13	15	16
4	07	09	10	12	14	16
4.4	07	08	10	12	13	15
5	05	08	09	11	12	14
5.5	05	07	08	10	12	13
6.0	03	06	08	10	11	13
6.5	03	05	07	09	10	12
7.3	03	04	06	09	10	11
8	03	03	05	08	09	11
9	02	03	04	07	09	10
10	02	03	03	06	08	09
11	02	02	03	05	07	09
12	01	02	03	04	06	08
13	00	02	03	04	05	08
14	00	02	02	03	05	07
16	00	01	02	03	04	06
17	00	00	02	03	03	05
19.5	00	00	01	02	03	04
22	00	00	00	02	03	03
28	00	00	00	01	02	03
30	00	00	00	00	02	02
34	00	00	00	00	01	02
43	00	00	00	00	00	01
48	00	00	00	00	00	00

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b. (U) NUDET Fallout Radiation Scripts

(1) (U) Radiation Casualties and Area Denial. Computer-produced Fallout Radiation Scripts will be provided in the same report and for the same installations/facilities scripted for direct effects. These scripts will be used to support the determination of fallout effects during the exercise. Fallout Radiation Scripts will provide a time-sequenced list of radiation (RAD) readings for all military installations or facilities scripted and affected by fallout. RECA controllers will use the information provided in NUDET Fallout Radiation Scripts to:

(a) (U) Provide players with periodic RAD readings, at appropriate installations, for the purpose of determining areas denied by radiation.

(b) (U) Compute radiation casualties for injection to player personnel at appropriate time intervals.

(2) (U) Fallout Casualty Computation. The following method will be used to compute casualties from radiation data provided in NUDET Fallout Radiation Scripts.

(a) (U) Before casualties can be calculated, a protection factor must be applied to the unshielded cumulative dose rate provided in the Fallout Radiation Script for a given installation. Exercise controllers may elect to compute individual protection factors for each function or a gross overall protection factor for all functions on an installation. For most applications, individual protection factors will not be necessary; however, if they are required, controllers should seek assistance from an NBC officer. Where gross calculation will suffice, the RECA controller may make a suitable estimate using the following guidelines:

<u>PROTECTION</u>	<u>FACTOR</u>
Open - no protection	1
Vehicles, Buildings, or Varied Protection	5
Foxholes, Armor	10
Fallout Shelters, Underground Installations	40

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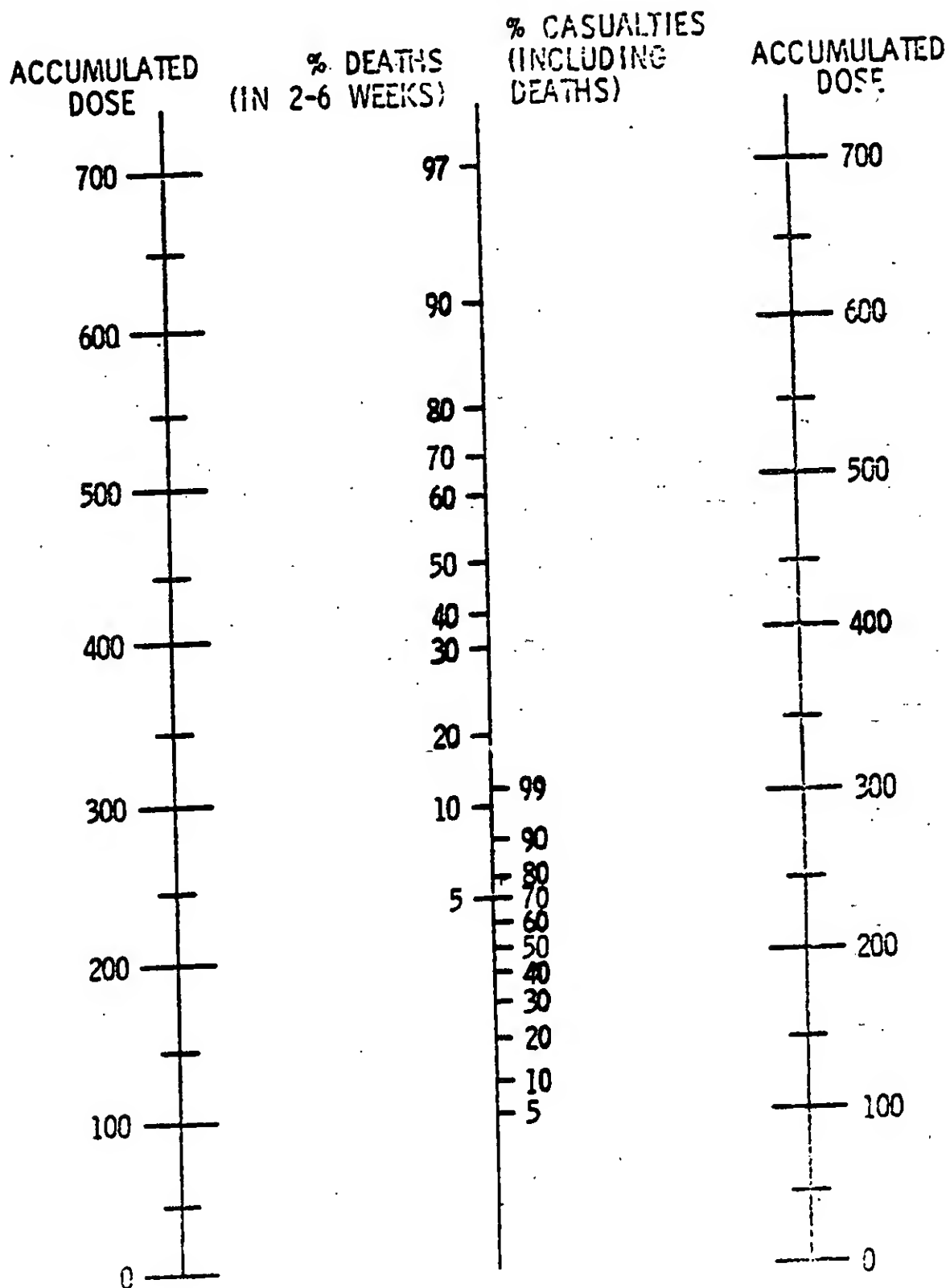
(b) (U) Compute the effective cumulative dose by dividing cumulative dose levels listed in the Fallout Radiation Scripts by the protection factor. Example: The average protection factor calculated for a unit is 10. Divide each calculated cumulative dose by 10 and the result is effective cumulative dose.

(c) (U) Calculation of casualties is carried out using the nomogram in subparagraph 5b(4).

(3) (U) NUDET Fallout Radiation Script Format. The lower half of Figure 1 illustrates the format of the Fallout Radiation Script. Cumulative RADS/HOUR at 12-hour intervals are provided for each installation in the Complex. RECA controllers should interpolate to compute doses for times that fall between the indicated intervals. Times and dose rates shown are illustrative only. They would be replaced by applicable values in the scripts distributed to controllers.

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(4) (U) EFFECTS OF ACCUMULATED DOSE  
(FOR EXERCISE PURPOSES ONLY)





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REFERENCES:

- a. JCS Pub 6, Volume II, Part 2, Chapter 1, 1 April 1980, "JRS, Unit Status and Identity Report (UNITREP)."
- b. Joint Operations Planning System, Volume IV (Crisis Action System), SM-502-85, 12 August 1985.
- c. JCS Pub 6, Volume II, Part 4, 2 November 1981, "JRS Nuclear Weapon Reports (NUREP)."
- d. JCS Pub 6, Volume II, Part 9, Chapter 1, 11 April 1983, "Joint Resource Assessment Data Base Report (JADREP)."
- e. AF CARDA OPLAN 2-84, March 1984, "CONUS Airborne Reconnaissance for Damage Assessment (CARDA)."
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APPENDIX

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